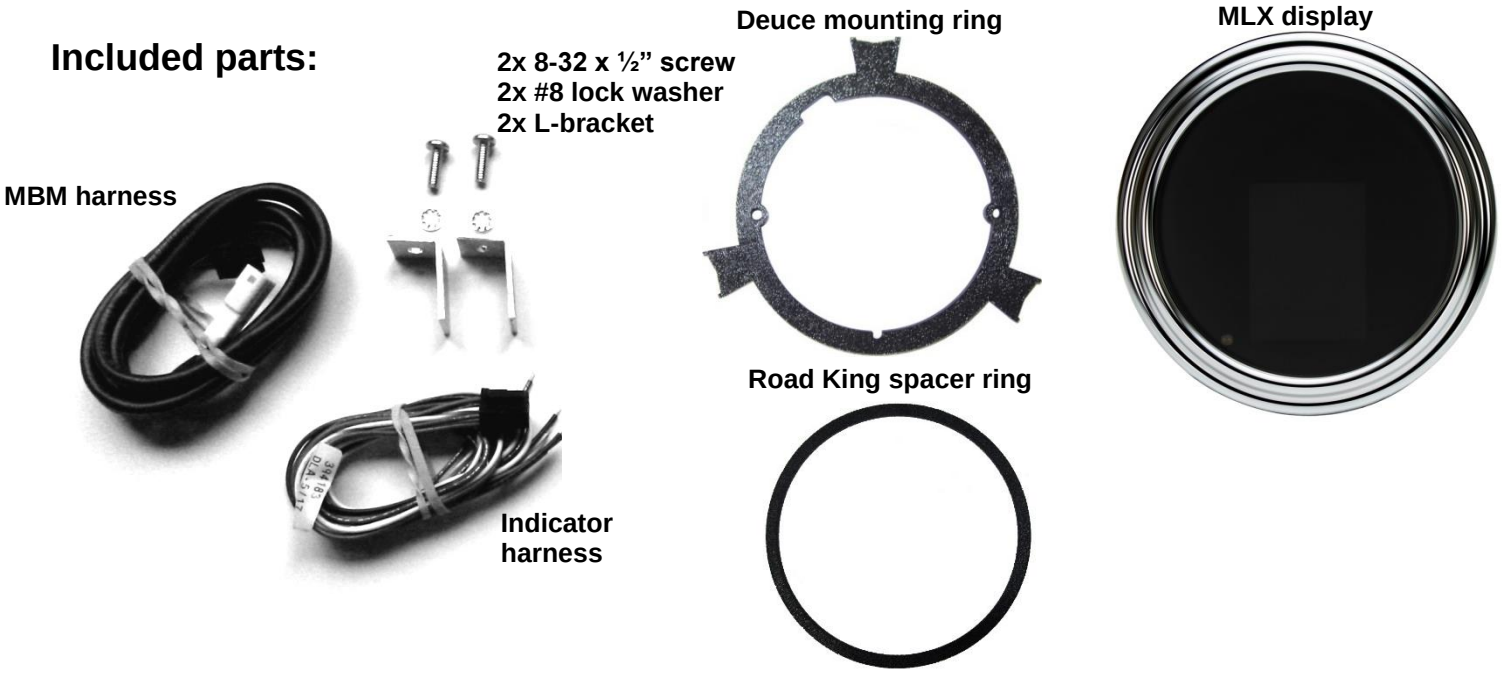
MLX-2004

HARLEY DAVIDSON TANK MOUNT SPEEDOMETER/TACHOMETER

A direct plug-in for 2004-2013 models with “fat bob” style tank-mount gauge except 2011-up Softail and 2012-up Dyna

Included parts:

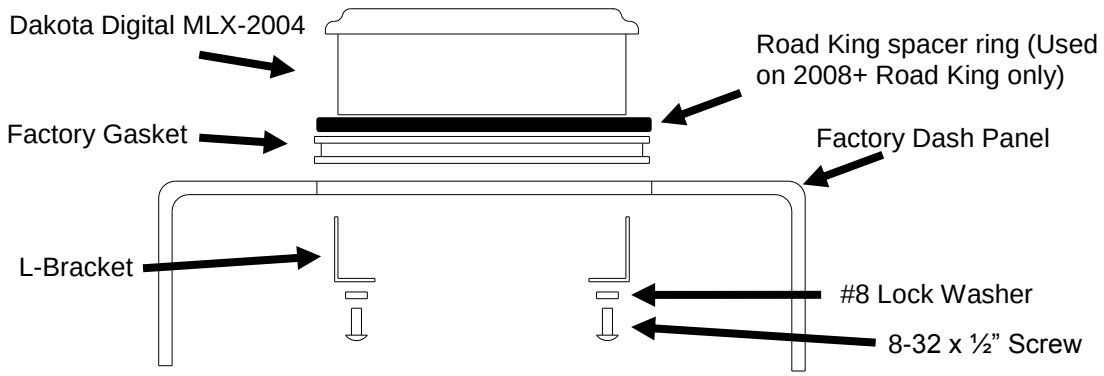


IMPORTANT NOTE!

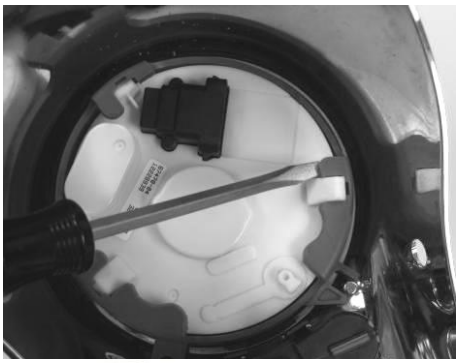
This gauge has an odometer preset option that is only available for the first 100 miles (160km) of operation. See “preset odometer” on page 10 for instructions.

Gauge installation (excluding Deuce):

NOTE: The supplied mounting ring is not used for these applications and can be discarded



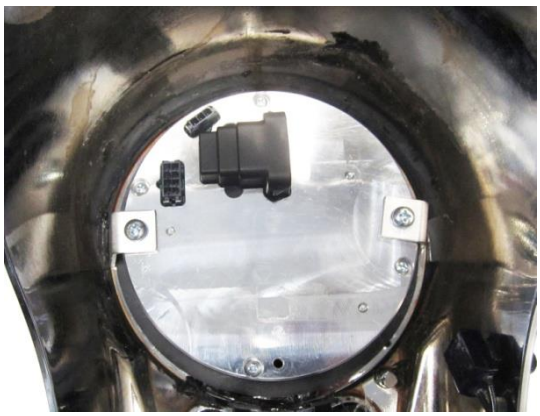
1. Remove the dash.
2. Unclip and unplug the factory gauge.
   The factory mounting ring will not be used.





3. Ensure the rubber gasket is in place on the dash;
   the MLX-2004 requires this factory piece.

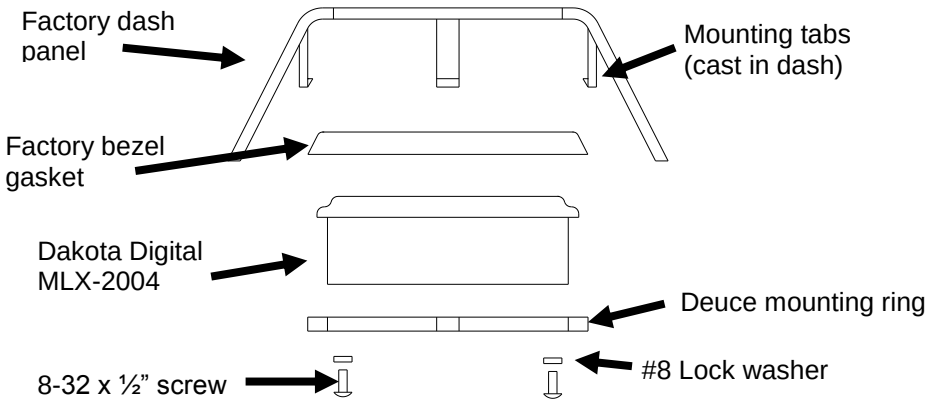
4. Insert the new gauge from front of dash and use supplied L-brackets, lock washers and screws to secure the gauge.
5. Before fully tightening the screws, plug in the main harness and turn the key on so you can align the gauge.
6. Tighten the screws.
7. If you'd like to add standard indicators, oil pressure, oil temperature, air pressure, boost or compass readings to the MLX-2004, connect the applicable harnesses and route to their appropriate locations; MBM modules may fit under the seat. Skip to wiring section of this manual before reinstalling the dash.



Gauge installation (Deuce only):

NOTE: The supplied L-bracket mounting pieces are not used for this application and can be discarded

The Deuce dash panel mounts the gauge from below, requiring use of the supplied snap ring.



1. Remove the dash.
2. Unclip and unplug the factory gauge.



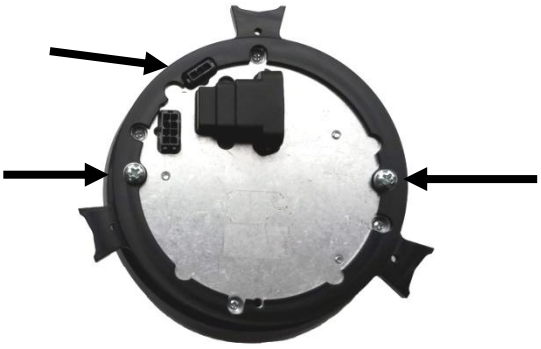
3. Remove the rubber gasket from the factory gauge bezel.



4. Fit the gasket over the bezel of the MLX-2004. Only the inner, raised portion of the front bezel will be exposed while the entire back of the bezel is covered by the gasket.



5. Place the mounting ring over the back of the gauge so the gauge fits in the recessed pocket. Align the screw and connector reliefs for proper orientation. Use the two 8-32 screws and lock washers so secure the bracket to the gauge; this will align the gauge properly in the dash.

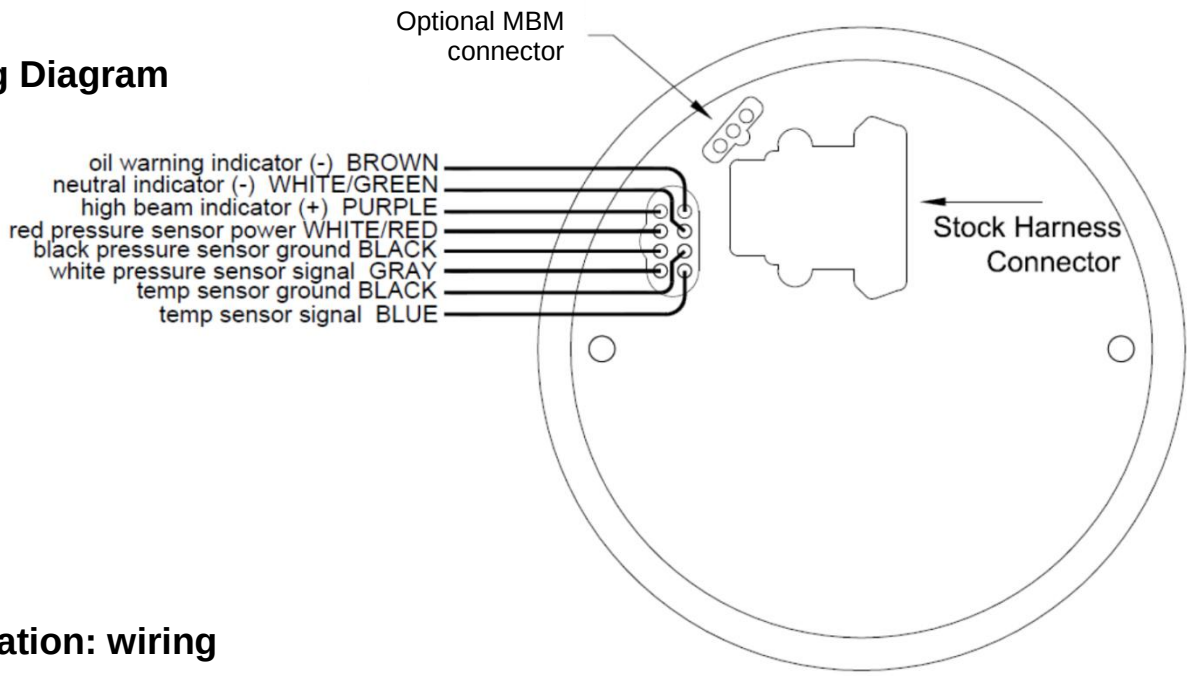


6. Snap the gauge into the dash starting with one tab in and then working in a clockwise direction snapping the other two tabs in one at a time. The tabs are tight so it takes a fair amount of pressure to snap them in; make sure they are seated under the tabs in the dash once locked in.



7. Plug in the main harness, and if you'd like to add standard indicators, oil pressure, oil temperature, air pressure, boost or compass readings to the MLX-2004, connect the applicable harnesses and route to their appropriate locations; MBM modules may fit under the seat. Skip to wiring section of this manual before reinstalling the dash.

Wiring Diagram



Installation: wiring

INDICATORS
Several indicators are supplied on the stock wiring harness, including turn signals, security (red key symbol), check engine (red 'E'), ABS (red 'ABS'), low fuel (amber fuel pump symbol), and cruise control (arrow and circle symbol, green/red). Cruise will be red when the cruise switch is on and change to green when the cruise is engaged.

An 8 pin indicator harness is supplied for the indicators not found in the stock harness connector.
The high beam indicator (purple wire) activates with a +12V signal.
The neutral (white/green) and low oil (requires stock switch, brown) indicators are activated by ground at their respective hook-up wires. These can be connected to the same wires that the stock indicator lights would be connected to.

OPTIONAL OIL TEMPERATURE
Dakota Digital part number SEN-1043 or SEN-1044 must be used. The SEN-1043 is a one-wire sender with 1/8" NPT threads. Connect the terminal on the end of the sender to the indicator harness blue wire. Because this sensor grounds through its body, ensure sure the sender threads are able to make a metal-to-metal connection to complete the ground. The SEN-1044 is a two-wire sender with 3/8" NPT threads. Connect the sender red wire to the gauge gray wire and connect the sender black wire to the indicator harness black wire.

MLX-2004	**Sender**
BLUE	SEN-1043 terminal **or** SEN-1044 sensor RED wire
BLACK	SEN-1044 sensor BLACK wire

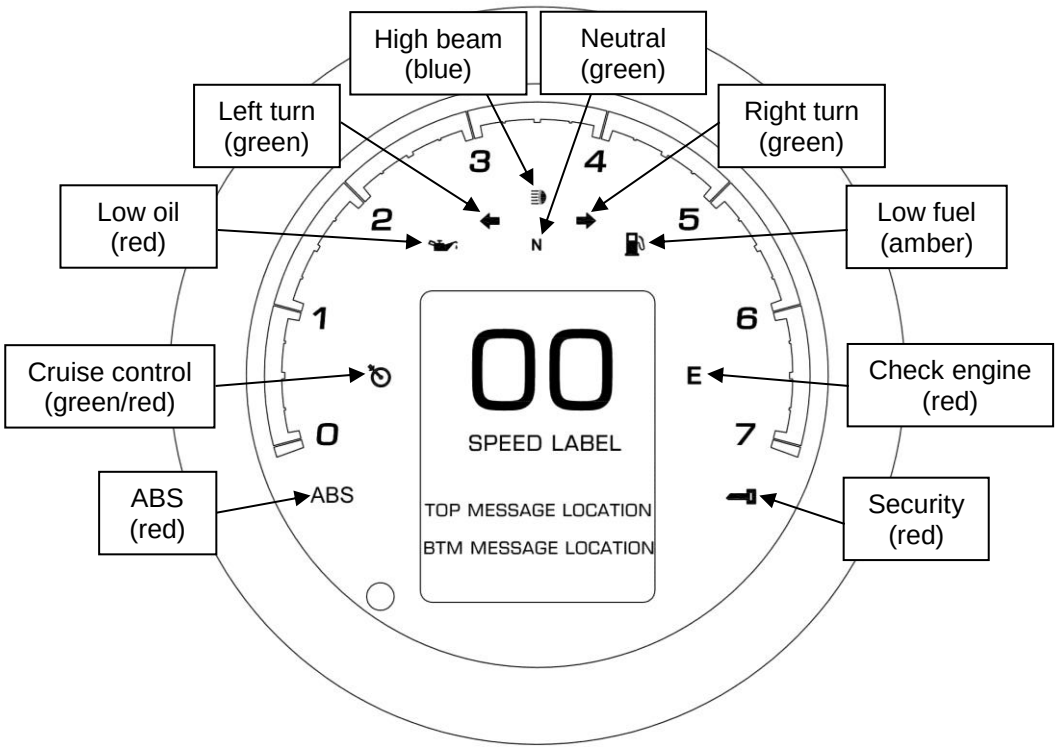
OPTIONAL OIL PRESSURE
Dakota Digital part number SEN-1039 must be used. The sensor red wire connects to the indicator harness white/red wire, the sensor white wire connects to the gauge gray wire, and the sensor black and bare shield wires connect to the indicator harness black wire.

MLX-2004	**Sender**
WHITE/RED	SEN-1039 sensor RED wire
GRAY	SEN-1039 sensor WHITE wire
BLACK	SEN-1039 sensor BLACK wire

Adding the SEN-1039 typically replaces the stock low oil pressure switch, eliminating the brown wire. The digital message center will alert the rider of a low oil pressure condition, which is user adjustable (10psi default).

System features

INDICATORS



LOCATIONS

There are two message locations available to display additional information under the speedometer. They are labeled Top and Bottom Message Location, respectively. You can program what you want in each location as well as turn readings off. Each location can have multiple readings assigned to it; simply tap the function switch to scroll to the next reading in that location. See function switch operation on page 6.

The main speedometer reading ranges from 0-250MPH/400km/H while the arching bar graph tachometer offers a 0-7000 RPM reading.

Information readings	**Description**
ODOMETER	Odometer reading (0-999,999)
TRIP A	Trip A odometer reading (0-9999.9)
TRIP B	Trip B odometer reading (0-9999.9)
SERVICE (when enabled)	Distance to next service (0-7500.0 or “SERVICE DUE”)
TRIP HR	Hours gauge has been on with engine running HH:MM (00:00 to 99:59)
SPEED km/h	Alternate speed unit conversion
RPM	Digital RPM reading (0-9,999)
OIL TEMP (with optional sender present)	Engine oil temperature
OIL PSI (with optional sender present)	Engine oil pressure
VOLTS	System voltage
DISTANCE TO E MI (when enabled)	Distance to empty
HEAD TEMP	Head temperature from ECM if supported
GEAR/CLOCK	Gear position and 12 hour clock display
Performance readings	
HIGH MPH	High speed recall
0-60 TIME	0-60 mph time in seconds
QUARTER MILE SPEED/TIME	Speed at end of ¼ mile (trap speed) and ¼ mile time from standing start
HIGH RPM	High RPM recall
MBM (Motorcycle Bus interface Module)	
MBM displays (optional)	Readings for connected modules

Programming, clock set

FUNCTION SWITCH

The factory trip reset switch on the side of the dash is used as the main function switch. During normal operation, the function switch allows access to information including mileage, RPM, and performance data located within two message locations below the speedometer. The message locations have arrows indicating which message location is currently selected, or in focus. Tap the function switch to scroll through information available in each location.

If you would like to change focus to another location, press and hold the function switch; you'll see a status bar labeled "Move Focus" filling. Once the status bar is filled, "RELEASE TO MOVE" will be displayed below; if the data in the selected location can be reset, such as a tripmeter, the bar will be emptying with "HOLD TO CLEAR" displayed above. Release the switch before the bar empties and the next line of information will be in focus, illustrated by arrows on each side. Focus alternates top and bottom.

To clear or reset information such as Trip A, Trip B or performance readings, press and hold the function switch until you see the status bar filling. Continue to hold the switch as the bar empties and then displays "HOLD TO CLEAR". Hold until you see "RELEASE" displayed above the status bar. The information will now be reset.

If the function switch is pressed while the key is in the off position, the clock and odometer will be displayed.

SETTING THE CLOCK

The clock uses a 12 hour format and can be set by holding the function switch while the focus arrow is next to the clock. If the clock is not shown, tap the function switch until it appears. Keep in mind you may need to move to another message location. Hold the switch until "Release" is displayed; the hours will begin flashing. Tap switch to change the hours, hold the switch to move to the minute set and the minutes will begin flashing. Tap the switch to change the minutes; hold the switch to save and exit the clock set mode.

SERVICE RESET

"SERVICE DUE" may appear at start up, indicating your preselected service time is due.
The screen will go back to the last display shown.

- To clear the service odometer, after your service was completed, press and release the function switch until the highlighted "SERVICE DUE" appears in either message location.
- When "SERVICE DUE" is displayed, hold the function switch until "RELEASE" is displayed.

Programming

SETUP MENU

To simplify the setup procedure, please download our IOS or Android app 'Dakota Digital Motorcycle'

The function switch is used to enter setup mode. To get into setup, press and hold the function switch while turning the key on. Press and release the switch to advance through the menus below, press and hold to enter each menu.

Main Menu	Sub Menu	Description
BLUETOOTH	STATUS CHECK	Bluetooth ID and current connection status
	OFF	Disable Bluetooth connections
	SETUP ONLY	Allow Bluetooth connections only while in setup
	ALWAYS ON	Allow Bluetooth connections when key is on
DIAGNOSTICS	ENGINE	Read diagnostic codes from engine module
	SECURITY	Read diagnostic codes from security module
	ABS	Read diagnostic codes from ABS module
LIGHTING COLOR	COLOR THEMES	Set factory defined color themes
	SET ALL COLOR	Set all areas to one color
	DISPLAY COLOR	Set speed digit color
	LABEL COLOR	Set speed label color
	MESSAGE COLOR	Set message location 1 and 2 color
	BAR COLOR	Set tach/fuel bar color
	WARNING COLOR	Set tach high warning color
	DIMMING	Set dimming method
	SUNLIGHT	Set sunlight brightness method
	RESET	Returns all colors and settings to factory default
SPEED	ADJUST	Adjust speed calibration +/- 25%
	UNIT	Select MPH or km/h unit
	SERVICE RESET	Set miles to service reset value or turn off
	ODO PRESET	Odometer preset **(Can only be set within the first 100 miles)**
TACH	HIGH WARNING	Set high RPM warning point
OIL TEMP	UNIT	Select F or C for temperature unit.
	ON/OFF	Enable/Disable option oil temperature reading
	*If ON-	The options below are only visible if this setting is set to on
	HIGH WARNING	Set high warning point
	TEST	Display sender resistance for troubleshooting
OIL PSI	ON/OFF	Enable/Disable option oil pressure reading
	*If ON-	The options below are only visible if this setting is set to on
	LOW WARNING	Set low warning point
	TEST	Display sender voltage for troubleshooting
FUEL	SENDER	Select fuel sender
	WARNING LIGHT	Enable/Disable fuel low warning light
	RANGE TO EMPTY	Enable/Disable/Reset distance to empty
	TEST	Display sender reading for troubleshooting
VOLT	LOW WARNING	Set low warning point
DISPLAYS	MESSAGE TOP	Show/Hide performance readings in top message location
	MESSAGE BTM	Show/Hide performance readings in bottom message location
	INDICATORS	Show/Hide indicators within gauge
	MBMS	Show MBM's connected to the speedometer and set warning points
GEAR	PRESET	Set gears based on factory setup
	LEARN	Learn gears based on speed and RPM
FACTORY RESET		Resets all settings except odometer to factory defaults
VERSION		Displays software codes of each controller
EXIT SETUP		Exit

Setup

PRESS AND HOLD FUNCTION SWITCH WHILE TURNING IGNITION ON. Release the switch.
Press and release the switch to move through the different setup menus.
Press and hold the switch to enter a setup menu.
Press and hold to also save an option.
Current selections within a sub menu are denoted with an asterisk (*).

Exiting Setup

At the end of every setup section, steps must be taken to properly exit the setup and return to normal operation. When a section in this manual says "**Exit setup**", please refer to these steps.

- Press and release the function switch until you see ">BACK".
- Press and hold the switch until you see "RELEASE", and release the switch.
- Press and release the function switch until you see ">EXIT MENU".
- Press and hold the function switch until you see "RELEASE", then release the switch.

BLUETOOTH Bluetooth menu

- ✓ Reference this is diagnostic section when using the app for your smartphone or tablet.
- ✓ The app can aid in setup and also read real time data on your device.

- When ">BLUETOOTH" is displayed, hold until "RELEASE" is displayed, and release the switch.
  - Under the word SETUP the Bluetooth ID will be shown.
  - For Android users, this is the ID that you pair to, in Settings/Bluetooth, prior to opening the app.
- The Bluetooth menu options are: "STATUS CHECK", "OFF", "SETUP ONLY", "ALWAYS ON", "RESET", "BACK, and "EXIT".
- STATUS CHECK: Shows the unit is either "WAITING" for connection or "CONNECTED" with the app.
- OFF: turns off the Bluetooth.
- SETUP ONLY: Bluetooth is only active in setup.
- ALWAYS ON: default mode, works for setup and for real time readings on your smartphone or tablet.
- RESET: resets the Bluetooth options to default, useful if pairing is a problem.

DIAGNOSTICS Diagnostics mode for checking/clearing trouble codes

- **The "run/kill" switch on the bike MUST be ON prior to running diagnostics.**
- When ">DIAGNOSTICS" is displayed, hold the trip switch until "RELEASE" is displayed, and release the switch.
- The setup options are: "ENGINE", "SECURITY", "ABS", and "BACK".
- Press and release the switch to change the selection.
- Press and hold the switch until "RELEASE", then release the switch.
- Each section will show either the current codes, "NONE", or "NO RESPONSE"
  - "NONE" means no codes exist.
  - "NO RESPONSE" means either that module is not active or the run switch is off.
- If a code is shown, press and release to move on to the next code, or to the end of the list.
  - Consult a service manual for trouble code descriptions.
- After all codes have been displayed, the display will show ">YES" and "NO".
  - To leave the codes, press and release the switch to move to ">NO".
  - Press and hold until "RELEASE", then release the switch.
- To clear codes, when the display shows ">YES" hold the switch until "RELEASE" then release the switch.
- "Done" will momentary display and then the part number of the module will be displayed.
- Press and release the switch to exit back to the Diagnostic menu.
- If "NO" codes exist, press and release the switch to show the module part number and again to exit.
- Press and release to move to move to the next section, or to "BACK" to exit.

LIGHTING Lighting menu for color changes

- When ">LIGHTING" is displayed hold until "RELEASE" is displayed, and release the switch.
- The color menu options are: "COLOR THEMES", "SET ALL COLOR", "DISPLAY COLOR", "LABEL COLOR", "MESSAGE COLOR", "BAR COLOR", "WARNING COLOR", "DIMMING" , "SUNLIGHT", "RESET" or "BACK".
- Since the color options are so expansive the selection process is the same in all sections.
    - Press and release the switch to change the selection.
    - Hold the function switch to enter the selected setup menu, until "RELEASE", and release the switch.
    - The display will show the available options. Press and release the switch to move through the available options.
        - An asterisk* will appear next to the option indicating it's set as the current setting.
    - Press and hold to select an option, until "RELEASE" is displayed.
    - Exit setup.
- COLOR THEMES: offers preset colors for the LCD color, label colors, message colors, tach bar, and tach warning.
- SET ALL COLOR: can set the entire gauge to one of 31 color choices.
- DISPLAY COLOR: independently sets the speed color to one of 31 color choices.
- LABEL COLOR: independently sets the MPH or km/h label color to one of 31 color choices.
- MESSAGE COLOR: independently sets the message area, (below the speed readout), color to one of 31 color choices.
- BAR COLOR: independently sets the color of the tach bar, up to the warning point, to one of 31 color choices.
- WARNING COLOR: independently sets warning point (high RPM) color to one of 31 color choices.
- DIMMMING: offers two options, AUTOMATIC night dimming, or "OFF".
- SUNLIGHT: special feature to enhance viewing of the TFT LCD in *bright daylight* with a high contrast display.
  This works independently from the night dimming
  If enabled, this will temporarily override the color choices made, to offer a visible display during the day.
  The color will revert back when the sunlight is less intense, (light overcast days can trigger this mode).
    - NORMAL: in daylight the background will stay black as the speed and messages will turn white.
    - INVERT: in daylight the background will turn white as the speed and messages will turn black.
    - OFF: your color choices will not change.
- RESET: This will reset all color choices and options back to original factory colors.

SPEED Speed setup menu

- When ">SPEED" is displayed hold until "RELEASE" is displayed, and release the switch.
- The selectable options are: "ADJUST", "UNIT", "SERVICE RESET", "PRESET ODO", or "BACK".
- Press and release the switch to change the selection. Press and hold the switch to select it.

ADJUST Speed Calibration

The speedometer is calibrated by the engine computer, but the speedometer reading can be adjusted through the gauge. The adjustment is set a value from 75% – 125% with 100% being no change.

- When ">ADJUST" is displayed, then press and hold the switch until "RELEASE", then release the switch
- The display will show the current calibration value, default is "*100".
- Press and release the switch to increase the value.
- The percentage will increase up to 125%. Once it reaches 125 it will roll back over to 75.
    - If you calculate that you need to reduce speed by 10%, click the switch until 90% is shown.
- Press and hold the switch until "RELEASE", to save the currently displayed value.

UNIT MPH/km/h Selection

- **It is very important to set the speed unit PRIOR to setting the odometer!**
- When ">UNIT" is displayed, press and hold the switch until "RELEASE" is displayed, release the switch.
- The display will show UNIT and ">*MPH" for miles and "km/h" for kilometers.
- MPH is default. Press and release the switch to choose between MPH or km/h.
- Hold the switch until you see "RELEASE" and release the switch.

SERVICE RESET miles or km to next service setup

Service is a countdown odometer. The service odometer display can be disabled or can be set to count down from 500 – 7500 miles, (800 to 12,000 kilometers). If the service odometer is enabled and reaches 0 miles/km, it will display "SERVICE DUE" each time the key is turned on.

- When ">SERVICE RESET" is displayed, press and hold the switch until "RELEASE" is displayed and release the switch.
- The current setting will be displayed. The default is ">*OFF", but it could be a value in miles or kilometers.
- The miles begin at 500 and go up to 7,500 miles in 500MI increments.
- The kilometers begin at 800 and go up to 12,000km in 800km increments.
- To change the service odometer, press and release the switch until the desired setting is displayed.
- Hold the switch until you see "RELEASE", and release the switch.
- Exit setup.

PRESET ODO Odometer preset

- ✓ The odometer starts at zero, but can be preset by the customer within the first 100 miles (161 km) of riding.
- ✓ After riding more than 100 miles (161 km), the menu option will no longer be displayed.
- ✓ Correctly select the units to be either MPH or km/h ***FIRST***, as the odometer will be set in the selected units.
- ✓ The preset is in full miles or kilometers only, ***no*** tenths
- ✓ The odometer can be reset multiple times within the first 100 miles (161 km) of riding.
- When ">PRESET ODO" is displayed, press and hold the switch until "RELEASE" is displayed and release the switch.
- The current miles will be displayed with the left most digit flashing.
- To change the flashing number, press and release the switch to the desired number.
- Press and hold the switch until "RELEASE" is displayed, then release the switch.
- Repeat the process of until the right most digit has been set.
- With the far right number flashing, press and hold the switch and the display will show ">SAVE ODO? NO".
- Verify the small odometer at the bottom is what you want set.
  - If incorrect, hold the button until "RELEASE" is displayed, then release the switch.
  - You can now step through the process again and correct your readings.
  - Turning the key off at any time will discard any attempted odometer settings.
- If the odometer is correct at the ">SAVE ODO? NO" screen, press and release the switch until "SAVE ODO? YES".
- When ">SAVE ODO? YES" is displayed, press and hold the switch until "RELEASE" is displayed and release the switch.
- Exit setup.

TACH Tachometer warning setup

- When ">TACH" is displayed, press and hold the switch until "RELEASE", then release the switch.
- When ">HIGH WARNING" is displayed, press and hold the switch until "RELEASE", then release the switch.
- The default high warning of "*5500" is shown with a range of 2200 – 8400 RPMs.
- Press and release the switch to increase the value by 100 RPMs.
- Once reaching 8400 RPMs the next number will roll back to 2200 RPMs.
- Once you choose a valid warning, press and hold the switch until "RELEASE", then release the switch.
- Exit menu.

OIL TEMP Engine oil temperature setup menu

- **Only valid to use when optional SEN-1043 or SEN-1044 is used.**
- When ">OIL TEMP" is displayed, press and hold the switch until "RELEASE" is displayed.
- The options are "UNIT", "ON", "OFF" and "BACK". **Factory default is "*OFF" (no temp displayed)**
- Press and release to choose an option, then press and hold to select option.
  - When ">UNIT" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
  - Press and release the switch to select "F", "C" or "BACK".
  - Press and hold the switch on the selection, until "RELEASE" is displayed, and release.
- The options are "UNIT", "ON", "OFF" and "BACK, again.
- To enable oil temp, when ">ON" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The selections will be "SENDER", "HIGH WARNING", "TEST", or "BACK".
- Press and release the switch to change the selection, press and hold the switch to select it.

SENDER Temperature sender selection

- When ">SENDER" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The display options are "SEN-1043", "SEN-1044" and "BACK".
- Press and release the switch to match to the optional sender you purchased from Dakota Digital.
- Press and hold the switch on the selection, until "RELEASE" is displayed, and release.

HIGH WARNING High oil temperature warning setup

- When ">HIGH warning" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The display will show the default high temp warning of ">*300".
- The high temperature warning points range from 225 to 375F, (107 to 190C).
- Press and release the switch to change the change the high temp warning point.
- Press and hold the switch until "RELEASE" is displayed, and release.

TEST Resistance test

- When ">TEST" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The display will give a resistance (ohm) reading of the sender. An open will read -1 ohms.
- Press and release the switch to change the gauge. Press and hold the switch to exit.
- Exit setup.

OIL PSI Engine oil temperature setup menu

- **Only valid when optional SEN-1039 pressure sender is purchased from Dakota Digital.**
- When ">OIL PSI" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The options are "ON", "OFF", and "BACK".
- To enable oil PSI, move focus to ">ON", press and hold the switch until "RELEASE" is displayed, and release.
- The selections will be "LOW WARNING", "TEST" and "BACK".
- Press and release the switch to change the selection, press and hold the switch to select it.

Low warning Low oil pressure warning setup

- When ">LOW warning" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The low pressure options will range from 0 to 30 PSI.
- Press and release the switch to change the change the low oil pressure warning point.
- To exit, press and hold the switch until "RELEASE" is displayed, and release.

TEST Voltage test

- When ">TEST" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The display will give a voltage return from the sender with 0.5 volts at zero PSI.
- 0.0 volts means the sensor is not connected.
- To exit, press and hold the switch until "RELEASE" is displayed, and release.
- Exit setup.

FUEL Fuel level setup menu

A low warning will be displayed on either the fuel gauge or Speed Top as a red band warning when fuel reaches 10%.

- When ">FUEL" is displayed, press and hold the switch until "RELEASE", then release the switch.
- The options to select between are "SENDER", "RANGE TO EMPTY", "TEST", and "BACK".
- Press and release the switch to change the selection, press and hold the switch to select it.

SENDER Fuel sender selection

- When ">SENDER" is displayed, then press and hold the switch until "RELEASE", then release the switch.
- The options to select between are "HD 2004", "HD 2008", or "CUSTOM".
- Press and release the switch to change to the proper sender.
- Press and hold the switch until "RELEASE", then release the switch.
- **Exit fuel setup to confirm fuel selection**
  - CUSTOM is only for rare occasions if a stock sender is not being used.
  - If CUSTOM is selected, you will be prompted to program.
  - When ">PROGRAM" is displayed, press and hold until "RELEASE", then release the switch.
  - The display will show "SET EMPTY"
  - **With an empty tank**, press and hold until "RELEASE", then release the switch.
  - The display will show "SET FULL"
  - **Fill the tank**
  - Press and hold until "RELEASE", then release the switch.
  - **Exit setup to confirm fuel selection.**

WARNING LIGHT Low fuel light setup

The low fuel indicator can be turned on or off.

- When ">WARNING LIGHT" is displayed, then press and hold switch until "RELEASE", then release the switch.
- The options to select from are "OFF", "ON", and "BACK".
- Press and release the switch to change the option.
- Press and hold the switch until "RELEASE" to save.

RANGE TO EMPTY Distance to empty (fuel) setup

- ✓ The range to empty option will calculate an estimate of miles until empty.
- ✓ This will vary on riding conditions and will change as it continually monitors fuel usage and speeds.
- ✓ The process will begin with a full tank, and then enter into the FUEL menu, RANGE TO EMPTY, and LEARN RESET.
- ✓ Once the reset has been done, you may ride until the tank is below ¼.
- ✓ This can be done over multiple trips as long as no fuel is added until the level is less than 25%, then it must be filled.
- ✓ When the system is working, the DIST TO E screen will have a countdown odometer.
- ✓ When the DIST TO E odometer reaches 35 miles or 56km, it show a "RANGE LOW" warning.
- ✓ Once the RANGE TO EMPTY is working, you may fill your tank normally, when needed.
- ✓ Range function not available on Sportster models as they have a low fuel switch and not an actual sensor.
- When ">RANGE TO EMPTY" is displayed, then press and hold the switch until "RELEASE", and release the switch.
- The options to select are "ON", "OFF", and "BACK".
- Press and release the switch to select an option.
- Press and hold the switch until "RELEASE", then release the switch.
- If ON is selected, the next option is "LEARN RESET" and "BACK".
- "LEARN RESET" will tell the gauge to learn fuel usage while riding. It can be reset again if the process failed.
  - Once the fuel tank is full, you may select "LEARN PRESET".
  - Press and hold the switch until "RELEASE", then release the switch.
  - **Exit setup**
  - Cycle the ignition then you may ride until fuel is less than 25%.
  - Only then, you may refill the tank. Once full, the process will complete itself.
  - Filling and refilling must be done the same way, either both on kick stand or both upright.

TEST Gauge reading test

- Press and release the switch until "TEST" is displayed, then press and hold the switch until "RELEASE" is displayed.
- The calculated fuel level from 0 – 99% will be shown. Press the switch to exit.

- Exit setup.

VOLT Low voltage warning setup

- When ">VOLT" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The low voltage warning points will range from 9.0 to 12.1 volts.
- Press and release the switch to change the low voltage warning point.
- Press and hold the switch until "RELEASE" is displayed, and release.
- Exit setup.

DISPLAYS Message display option menu

Refer to graphic on **page 5** for indicator and message locations.

- When ">DISPLAYS" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The display will show "MESSAGE TOP", "MESSAGE BTM", "MBMs", or "BACK".
- Press and release the switch to change the selection, press and hold the switch until "RELEASE" is displayed, and release.

MESSAGE TOP Top message screen information

- When ">MESSAGE TOP" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The selectable options are "PERFORM HIDE", "PERFORM SHOW", and "BACK".
- Push and release the switch to select the option, press and hold the switch until "RELEASE" is displayed, and release.
- PERFORM HIDE: does not allow any performance option displays to be show while riding.
- PERFORM SHOW: turns on the following options, which can toggled through while riding.
  - HIGH Speed (MPH – km/h), 0-60 time, ¼ mile speed with ¼ mile time, and HIGH RPM.
- Press and release the switch to change the change the option.
- Press and hold the switch until "RELEASE" is displayed, and release.
- Exit setup.

BTM MESSAGE Bottom message screen information

- When ">MESSAGE BTM" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The selectable options are "PERFORM HIDE", "PERFORM SHOW", and "BACK".
- Push and release the switch to select the option, press and hold the switch until "RELEASE" is displayed, and release.
- PERFORM HIDE: does not allow any performance option displays to be show while riding.
- PERFORM SHOW: turns on the following options, which can be toggled through while riding.
  - HIGH Speed (MPH – km/h), 0-60 time, ¼ mile speed with ¼ mile time, and HIGH RPM.
- Press and release the switch to change the change the option.
- Press and hold the switch until "RELEASE" is displayed, and release.
- Exit setup.

MBMS Display which MBMs are connected and adjust warnings

If a pressure or boost sensor is not connected or failed, the display will show "FAIL", "TOO LOW".
If no MBM is attached but the display shows a blank value, click through the displays to remove it.

- When ">MBMs" is displayed, press and hold the switch until "RELEASE" is displayed, and release.
- The screen display what MBM modules are attached and more than one input if it exists.
- The screen will show "NONE" if there are no MBMs present.
- Press and release the switch to move through the MBMs attached.
- Press and hold the switch until "RELEASE" is displayed on the MBM setting to modify.
  - See the separate MBM manual for additional details.
- Exit Setup.

GEAR Gear indicator setup

Optional gear readout will be displayed to the left of the clock only.
No programming is required with stock gearing and tire size.
The gauge can 'learn' the gear ratios based on speed and RPM, no additional sensors are needed.
This feature will work with various transmissions up to seven speed models.
The factory preset option will preset the indicator to work with a stock 5 or 6 speed drive train.
With a stock 6 speed, there will be a slight delay the first time you shift to sixth gear as the system verifies the gear.
When "learning" the gear positions, you will need a stretch of road to gradually reach highway speeds with no interruptions.
Each gear will need the speed to be held steady, until instructed to speed up and shift up.

- **>> Gear "LEARNING" requires holding the function switch, THEN starting the engine to enter setup <<**
- Once the engine is running, release the switch.
- Press and release the switch until "GEAR" is displayed.
- Press and hold the switch until "RELEASE" is displayed, then release the switch.
- The display will show "PRESET", "LEARN", or "BACK".
    - "PRESET" set the gear reading to factory gearing and tire size
    - "LEARN" starts the leaning process of speed and RPMs to calculate your gear reading.
- To reset the gear to not be displayed select ">PRESET".
    - Press and hold the switch until "RELEASE" is displayed, then release the switch.
    - Press and hold again to return to Gear menu.
- To start learning gears, press and release the switch until ">LEARN" is displayed, then press and hold the switch.
    - The message will show "NO RPM" if the engine RPM is below 1500.
    - The message could also say "LOW SPEED" if the vehicle speed is below 5 MPH.
- Begin riding in 1st gear. The display should show "WAIT 1".
- Ride at a steady speed and steady RPM until the message changes to "SHIFT TO 2".
- It should only take about 20 seconds if the speed and RPMs are steady.
    - *Optional: If the message continues to say "WAIT 2", you can manually override and jump to the next gear by pressing and releasing the switch to store the gear position quicker.*
- Upshift to 2nd gear and ride at a steady speed. The display should change to "WAIT 2".
- Ride until the message changes to "SHIFT TO 3". Shift to 3rd gear.
    - *Optional: If the message continues to say "WAIT 3", you can manually override and jump to the next gear by pressing and releasing the switch to store the gear position quicker.*
- Repeat this through each gear.
- When you are done, come to a complete stop.
    - You may also press and hold the switch, while riding, until the display shows "MOVE FOCUS" and then release it.
- The gears will now show up to the left of the clock display only.

***When downshifting, the gear position may jump up momentarily as the RPM is higher than expected.**
Also, the gear position reading may drop to "N" or a "0" when you pull the clutch in coming to a stop.
The position will begin reading as the bike begins to move in gear.

FACTORY RESET

- In the event you would like to start over with your settings, preferences and display locations, this will reset all settings back to the out-of-the-box configuration.
- This includes message locations, color selections and speedometer calibration but **DOES NOT** include the odometer.
- When you see ">FACTORY RESET", press and hold the switch until "RELEASE" then release the switch.
- The options will be "NO" and "YES".
- By pressing and holding on ">NO" it will exit the reset menu.
- When you select ">YES", press and hold the switch until "RELEASE" is displayed, then release the switch.
- The screen will "YES" and "RESET". Tap the switch once to return to the main menu.

VERSION

- For technical support assistance, this screen can display the model number and the software versions loaded for the two processors.

EXIT SETUP

- Exits the setup menu and returns to normal gauge operation.

Troubleshooting guide

Problem	Possible cause	Solution
Gauge will not light up.	Brown/Gray wire does not have power.	Inspect and repair stock harness.
	Orange/White wire does not have power.	Inspect and repair stock harness.
	Orange wire does not have power.	Inspect and repair stock harness.
	Black wire is not getting a good ground.	Inspect and repair stock harness.
	Ignition switch not connected or damaged.	Inspect and repair stock switch or harness.
	Gauge is damaged.	Return gauge for repair (see instructions).
Gauge lights up, but speed will only show zero.	No data from ECM.	Check engine trouble codes.
	Sensor is not sending a speed signal.	Check wiring and test sensor.
Speed reading is incorrect.	Gauge is not calibrated correctly.	Gauge must be calibrated (see instructions).
Gauge lights up, but tach will only show zero.	No data from ECM.	Check engine trouble codes.
Engine indicator does not work.	No data from ECM.	Check engine trouble codes.
Pressure reading does not show up.	Pressure sender is not enabled in setup menu.	Select “ON” under OIL PSI menu.
Oil Temperature reading does not show up.	Oil Temp sender is not enabled in setup menu.	Select “ON” under OIL TEMP menu.
Pressure or temperature reading shows ‘SHORT’ ‘LO’	Sender is shorted to ground.	Inspect wire for bare insulation or pinching.
	Pressure power wire is not connected.	Connect sensor RED wire to gauge WHITE/RED wire.
Pressure or temperature reading shows ‘OPEN’or ‘HI’	Sender wire is open or broken.	Inspect for breaks in wire connection.
	Sender is not grounded.	Check sender ground connection.
Low fuel light not turning on.	Incorrect setting or turned off.	Verify function is “ON” in FUEL setup menu and that the set up is correct or adjust the value.
Low fuel light turning on too early/late.	Incorrect setting.	Verify setting or adjust value following FUEL menu adjust feature in setup.
Low fuel light always on.	Sensor damaged.	Check resistances following procedure in service manual.
Gauge display has white background in sunlight	Sunlight setting is set to “Invert”	This is a default setting on this gauge to increase visibility in direct sunlight. This can be modified in the “Sunlight” menu if desired

SERVICE AND REPAIR

DAKOTA DIGITAL offers complete service and repair of its product line. In addition, technical consultation is available to help you work through any questions or problems you may be having installing one of our products. Please read through the Troubleshooting Guide. There, you will find the solution to most problems.
Should you ever need to send the unit back for repairs, please call our technical support line, (605) 332-6513, to request a Return Merchandise Authorization number. Package the product in a good quality box along with plenty of packing material. Ship the product by UPS or insured Parcel Post. Be sure to include the RMA number on the package and include a complete description of the problem with RMA number, your full name and address (street address preferred), and a telephone number where you can be reached during the day. Any returns for warranty work must include a copy of the dated sales receipt from your place of purchase. Send no money. We will bill you after repair.

Dakota Digital 24 Month Warranty

DAKOTA DIGITAL warrants to the ORIGINAL PURCHASER of this product that should it, under normal use and condition, be proven defective in material or workmanship within 24 MONTHS FROM THE DATE OF PURCHASE, such defect(s) will be repaired or replaced at Dakota Digital’s option. This warranty does not cover nor extend to damage to the vehicle’s systems and does not cover removal or reinstallation of the product. This Warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse, neglect, or accident. This Warranty is in lieu of all other expressed warranties or liabilities. Any implied warranties, including any implied warranty of merchantability, shall be limited to the duration of this written warranty. Any action for breach of any warranty hereunder, including any implied warranty of merchantability, must be brought within a period of 24 months from date of original purchase. No person or representative is authorized to assume, for Dakota Digital, any liability other than expressed herein in connection with the sale of this product.

⚠**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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